



**MINNESOTA DEPARTMENT OF PUBLIC SAFETY
State Fire Marshal Division**

GUIDELINE

Guideline #: INS ED-08 (2007)	Subject of Guideline: Occupant Relocation and Staged Evacuation Strategies for Schools		
Reviewed and Approved By: Jerry Rosendahl	Title: State Fire Marshal	Effective Date: July 10, 2007	

APPLIES TO:

All School Inspection Personnel, Code/Plans Specialists.

PURPOSE:

To provide uniform application of the MSFC (07) for occupant relocation within school buildings or staged evacuation of school buildings that possess an adequate level of fixed fire protection. These arrangements permit the investigation of the fire alarm source and relocation instead of complete evacuation.

GUIDELINE:

SECTION 1 — STAGED EVACUATION

The State Fire Marshal Division will allow school buildings to use staged evacuation procedures. Staged evacuation allows relocation to a different fire-rated compartment within the building. In order to be acceptable for this type of arrangement, the school must meet all of the following requirements:

1. The building must be constructed of non-combustible construction (Type I or II),
2. The building must be protected throughout by a complete automatic extinguishing system,
3. The building must be protected with a complete corridor smoke detection system having “point-addressable” technology to be able to identify the initiating device from the fire alarm control panel and all annunciator panels,
4. The building must have a complete and operational public address system that is audible throughout the building,
5. The building must have fire separation walls of masonry construction with openings protected as required for horizontal exits, and
6. A pre-approved plan must be developed that incorporates the provisions found in Section 2.

The State Fire Marshal Division reserves the right to rescind or revoke approval of this strategy if the school no longer meets the criteria above or it has been shown that the procedures have not been followed.

SECTION 2 --- EMERGENCY & EVACUATION PLAN

Plans must be developed by the school in cooperation with the local fire official. The plans need to be specific to the school in question. The plan should outline responsibilities for alarm investigation and instructions for staff and students. The following components must be included in the plan:

1. Separate fire areas within the building must be established,
2. Upon activation of the alarm, occupants will relocate to the exterior of the building.
3. If the exact location of the alarm can be determined, occupants can be re-directed to a different fire area within the building (i.e. can be moved from the classroom section to the gymnasium),

SECTION 3 — DELAYED EVACUATION

The State Fire Marshal Division will allow school buildings to develop plans not requiring the immediate evacuation of students and staff. In order to be acceptable for this type of arrangement, the school must meet all of the following requirements:

1. The building must be constructed of non-combustible construction (Type I or II),

2. The building must be protected throughout by a complete automatic extinguishing system,
3. The building must be protected with a complete corridor smoke detection system having “point-addressable” technology to be able to identify the initiating device from the fire alarm control panel and all annunciator panels,
4. The fire alarm system is permitted to have positive alarm sequencing features to allow for investigation of the alarm source,
5. The building must have a complete and operational two way intercom or telephone system installed in all classroom areas,
6. The building must have fire separation walls of masonry construction with openings protected as required for horizontal exits, and
7. A pre-approved plan must be developed that incorporates the provisions found in Section 4.

The State Fire Marshal Division reserves the right to rescind or revoke approval of this strategy if the school no longer meets the criteria above or it has been shown that the procedures have not been followed.

SECTION 4 --- EMERGENCY & EVACUATION PLAN

Plans must be developed by the school in cooperation with the local fire official. The plans need to be specific to the school in question. The plan should outline responsibilities for alarm investigation and instructions for staff and students. The following components must be included in the plan:

1. Separate fire areas within the building must be established,
2. Upon activation of the alarm, a signal is received at the fire alarm control panel (FACP) or fire alarm annunciator panel (FAAP) showing the location of the alarm activation (point addressable),
3. The appropriate school staff (usually office personnel) will assign other staff to investigate the alarm,
4. The fire alarm signal will not sound for a period of 90 seconds while staff investigates (positive alarm sequencing),
5. If no report from investigating staff is received within 90 seconds, the positive alarm sequencing function will initiate the fire alarm (see Fire Procedures – Section 5),
6. If a second alarm initiating device activates, the Fire Procedures will be followed.

SECTION 5 – FIRE PROCEDURES

1. Upon activation of the fire alarm audible signal, all students should leave their classroom or area,
2. Occupants can be relocated to an alternate location within the building pursuant to Sections 1 and 2,
3. Designated staff should immediately call the fire department (911) in accordance with their emergency plans,
4. If in doubt, the building should be immediately evacuated.

RATIONALE:

Section 404.2 of the MSFC (07) requires that schools have fire safety and evacuation plans. Section 404.3.1 of the MSFC requires that the plan include whether the evacuation of the building is complete or whether it involves selected floors or areas only. This document is intended to provide guidance on when total evacuation is required, when delayed evacuation is acceptable, or when staged evacuation (i.e. selected floors or areas) is allowed.

The State Fire Marshal Division recognizes the remarkable fire safety features of automatic sprinkler systems and early warning smoke detection. These represent drastic improvements in fire and life safety in schools. These features were not commonly present in school buildings even ten years ago.

When many of the requirements for fire evacuation drills were developed, the only fire safety features in schools were manual fire alarm pull stations and fire extinguishers; both of which required human intervention. Even during these times, pre-signal fire alarm systems were common; these systems delayed the activation of the general evacuation signal for a period of time while staff investigated.

Automatic smoke detection is much quicker than waiting for the fire to be seen and human intervention to take place. This gives added time. The automatic sprinkler system will allow fires to be kept to pre-flashover conditions and will eliminate spread from the area or room of origin.

The State Fire Marshal recognizes and acknowledges that fire drills are an extremely important component of school fire safety. Fire drills in schools, however, can be very disruptive to the learning environment. These types of disruptions should be minimized when there are built-in, automatic fire protection features provided in the school.

This type of staged evacuation/defend in place strategy has been used successfully for years in Institutional Occupancies (hospitals, prisons, nursing homes) and in high-rise buildings. In these other situations, occupants may not be as familiar with their surroundings or as mobile as are typical school students.

In some cases, complete evacuation of a school building may pose risks to students. There are some buildings that are “land-locked” (i.e. built with roads on three or four sides); students and staff in these situations are subject to the risk of being struck by passing vehicles. There are also concerns about extended periods of inclement weather in Minnesota; students and school officials do not like standing outside in sub-zero temperatures for false alarms.

There are also some additional safety benefits with these guidelines. Occupants tend to take alarm activations more seriously if there has not been a history of false alarms (i.e. crying wolf syndrome). The presence of positive alarm sequencing reduces the false alarm activations (from both malicious false alarms and nuisance alarms (false activation due to dust, weather, steam, etc.)). Decreasing false alarms also increases safety for emergency responders. According to the United States Fire Administration, 18% of the firefighter fatalities from 1990 – 2000 occurred while responding to incidents. False alarm responses “on the red” pose an enhanced risk to responding firefighters and the general public.

The positive alarm sequencing function allows the same procedures to be followed during normal school hours and for after-hours functions as it requires no staff intervention. If no positive action is taken, the alarm will activate and occupants should be expected to evacuate.